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AUTHOR Whitley, Bernard E., Jr.; Golin, Sanford
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ABSTRACT

Most research examining the relationship between sex role orientation and psychological well-being has been guided by either the congruence, androgyny, or masculinity model. The congruence model predicts that low self-esteem and high depression are consequences of gender/sex role incongruence. The androgyny model predicts that high self-esteem and low depression result from the additive effects of high masculinity and high femininity in both sexes. The masculinity model predicts that high self-esteem and low depression are a result of high masculinity in both sexes. Undergraduates (N=258) completed the Bem Sex Role Inventory, the Beck Depression Inventory, and the Revised Janis-Field Feelings of Inadequacy Scale. Although sex role self-concept was related to depression, the process was different for men and women. Path analysis of the data for women strongly supported the masculinity model for women; greater masculinity was associated with high self-esteem and low depression. Results of the path analysis for men partially supported the congruence model; self esteem was maximized and depression minimized when gender and sex role self-concept were congruent. The findings tend to support the general view that depression is related to sex role self-concept as a consequence of the self-concept's influence on self-esteem. (NRB)

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SEX ROLE SELF-CONCEPT AND DEPRESSION: A PATH-ANALYTIC APPROACH

Bernard E. Whitley, Jr.
Sanford Golin
University of Pittsburgh

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Sex Role Self-concept and Depression: A Path-Analytic Approach

Bernard E. Whitley, Jr. and Sanford Golin
University of Pittsburgh

The question of the relationship between sex role orientation and psychological well-being has recently become the subject of increased theoretical interest and emprical investigation (e.g., Maffeo, Note 1; Schaffer, 1980; Sobol & Russo, 1981; Whitley, 1980; Worrell, 1978). These research endeavors have been guided by one of three theoretical models concerning the relationship between sex role and well-being. These models are the congruence model, the androgyny model, and the masculinity model.

Models of the Relationship

The congruence model. The most long-standing model of the relationship between sex-role orientation and psychological well-being is based on the assumption that masculinity and femininity are the opposite poles of a single dimension. That is, one must have either a masculine or a feminine sex-role orientation since these orientations are mutually exclusive and incompatible. This assumption leads to the

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Correspondance concerning this paper should be sent to Bernard E. Whitley, Jr., Department of Psychology, University of Pittsburgh, Pittsburgh, Pennsylvania, 15260.

hypothesis that well-being will only be fostered when one's sex-role orientation is congruent with one's gender and that such congruence is necessary for well-being (e.g., Abraham, 1911/1949; Erikson, 1963; Kagan, 1964; Mussen, 1969). The concept of sex-role orientation has recently been reformulated to encompass two complementary dimensions of masculinity and femininity (cf. Bem, 1974, 1979; Constantinople, 1973; Spence & Helmreich, 1978), and the congruence model has been similarly reformulated. Chevron, Quinlan, and Blatt (1978), for example, have proposed that depression is a result of low masculinity and high femininity in men and of high masculinity and low femininity in women.

The androgyny model. This recent emphasis on the two-dimensional nature of sex role has also led to the development of the androgyny model (e.g., Bem, 1974, 1979; Spence & Helmreich, 1978) This model assumes that masculinity and femininity are independent and complementary, rather than incompatible, dimensions. Persons can incorporate a high degree of both masculinity and femininity in their sex-role orientation (an androgynous orientation), incorporate a high degree of either masculinity or femininity and a low degree of the other (a masculine or a feminine orientation), or incorporate a low degree of both (an undifferentiated orientation). The androgyny model proposes that one's self-esteem will be maximized when one has an androgynous sex-role oerientation, and suggests that such an orientation would "define a more human standard of mental health" (Bem, 1974, p. 162; see also Gilbert, 1981; Kaplan, 1976; Nickerson, 1977). The androgyny

model is of particular interest for the study of depression because low self-esteem has been regarded by many theorists (e.g., Beck, 1967; Bibring, 1953; Wilson & Krane, 1980) as a primary determinant of depression. A state of psychological androgyny, then, would foster self-esteem and thereby protect against depressive symptoms.

The masculinity model. The proposed relationship between androgyny and self-esteem has been called into question by empirical findings which have suggested that the relationship is primarily attributable to the masculinity component of androgyny, and that the influence of femininity on self-esteem is negligible (Jones, Chernovitz & Hansson, 1978; Kelly & Worrell, 1977; Whitley, Note 2). These findings suggest the masculinity model, in which one's self-esteem and level of depression is seen to be a function of the extent to which one has a masculine sex-role orientation, irrespective of one's gender.

Congruence, androgyny, or masculinity -- which, if any, determines depression by way of its influence on self-esteem? The three models suggested by the literature are illustrated in Figure 1. The first model, the traditional congruence model (e.g., Chevron et al., 1978) predicts that low self-esteem and high depression will be a consequence of gender-sex role incongruence; that is, low masculinity and high femininity in men and high masculinity and low femininity in women. The androgyny model (e.g., Bem, 1974, 1977; Gilbert, 1981; Kaplan, 1976; Spence et al., 1975) predicts that high self-esteem and low depression will result from the additive effects of high masculinity and high

femininity in both men and women. Finally, the masculinity model (e.g., Jones et al., 1978; Kelly & Worrell, 1977; Whitley, Note 2) predicts that high self-esteem and low depression are unrelated to femininity but, rather, are a result of high masculinity in both sexes.

Path Analysis

The present study was designed to examine the sequence of relationships assumed by each of these models and to determine which model, or models, are in accord with the data. The method employed for testing the plausibility of each of these causal models was path analysis (Asher, 1976; Kerlinger & Pedhazur, 1973). Path analysis allows for all hypothesized causal factors specified by causal models, such as those illustrated in Figure 1, to be incorporated into an overall predictive analysis, thereby permitting an estimation of the relative contribution (both direct and indirect) of each hypothesized cause to variation in its hypothesized effects. Each effect variable is treated as a cause of other variables farther down the specified causal chain until the ultimate dependent variable is reached. In the present case, the dependent variable of interest is depression.

It is important to bear in mind, however, that path analysis is not a procedure for demonstrating causality, but rather is designed to determine whether a causal model fits the data. In essence, we attempt to answer the question "Which of the models illustrated in Figure 1 fits the data adequately?" by comparing the observed relationships among the variables with the predicted relationships.

Method

Subjects

One hundred forty female and 118 male introductory psychology students served as subjects in order to fulfill a course requirement for research participation. The school draws from a primarily white, middle-class population. The mean age of the men was 18.6 years and of the women, 18.3 years.

Materials and Procedure

Subjects participated in groups of 30 to 60, completing a questionnaire consisting of (a) the Bem Sex Role Inventory (BSRI; Bem, 1974), (b) the short form of the Beck Depression Inventory (BDI; Beck & Beck, 1972), and (c) the Revised Janis-Field Feelings of Inadequacy Scale (for self-esteem; Robinson & Shaver, 1969). Following the suggestion of Bem (1977), BSRI masculinity and femininity scale scores were used in the analysis rather than sex-role categories. This procedure has the effect of increasing the statistical power of the analysis (cf. Cohen & Cohen, 1975). Although the BSRI has recently been criticized on the basis of its factor structure (e.g., Pedhazur & Tetenbaum, 1979), there is ample evidence of its predictive and content validity as a measure of masculinity and femininity (Bem, 1979).

Path Analysis

The data-analytic technique used in this study was path analysis, a procedure wherein the relationships specified by an *a priori* causal ordering of variables are confirmed by (a) determining that each

hypothysized cause contributes a significant unique share of the variance to each of its hypothesized effects, and (b) determining that no plausible alternative model using the variables of interest meets the first criterion. These determinations can be made using multiple regression analysis (Asher, 1976; Kerlinger & Pedhazur, 1973).

The causal paths hypothesized by the models illustrated in Figure 1 were analyzed by computing the standardized regression coefficient (called the path coefficicent in path analysis) between each hypothesized cause and its hypothesized effects, controlling statistically for variables higher in the causal chain than the causal variable of interest and for other hypothesized causes of the effect variable of interest. For example, the direct causal effect of self-esteem on depression was computed as the path coefficient of self-esteem with depression, controlling for masculinity and femininity. Indirect effects were computed as the products of the path coefficients along the confirmed causal chain and total effects as the sum of the direct and indirect effects (Asher, 1976).

A path was considered to have been confirmed if its path coefficient attained the .01 level of significance. This level was chosen in order to maintain the experimentwise error rate at .05 (cf. Kirk, 1968).

Results

The means and zero-order intercorrelations of the variables are presented in Table 1, with the intercorrelations of the women's scores

above the diagonal and those of the men's scores below the diagonal. In order to examine the possibility of different models' being confirmed for men and women, seperate analyses were performed for each sex. Sex differences were found, and the results of the path analyses are illustrated in Figure 2 and the effects of the variables on depression are summarized in Table 2. The values associated with the arrows in Figure 2 are path coefficients (P); solid lines indicate confirmed paths, and broken lines indicate paths which were not confirmed.

Results for Women

The matrix of intercorrelations of women's scores on the predictor variables (masculinity, femininity and self-esteem) was tested for multicollinearity using Haitovsky's Chi-square technique (Rockwell, 1975), and it was determined that the null hypothesis of multicollinearity could be rejected (determinant of matrix (det) = 0.727, chi-sq(3) = 177.937, $p < .001$).

The results of the path analysis for women are illustrated in the top half of Figure 2, and the effects of the variables on depression are summarized in the top half of Table 2. The paths leading from masculinity to depression ($P = -.324$, $p < .001$), from masculinity to self-esteem ($P = +.508$, $p < .001$), and from self-esteem to depression ($P = -.274$, $p < .005$) were confirmed, whereas the paths from femininity to depression ($P = +.086$, ns) and from femininity to self-esteem ($P = +.010$, ns) were not. There was also a nonsignificant correlation between masculinity and femininity ($r = .138$). These results strongly

support the masculinity hypothesis for women, with masculinity having a direct effect of -.324 on depression and an indirect effect of -.139 (the effect of masculinity moderated by self-esteem), for a total effect of -.463, and with femininity having no significant effect.

Results for Men

The matrix of the intercorrelations of men's scores on the predictor variables was also tested for multicollinearity, and it was determined that the null hypothesis of multicollinearity could be rejected (det = 0.696, chi-sq(3) = 137.258, $p < .001$).

The results of the path analysis for men are illustrated in the lower half of Figure 2, and the effects of the variables on depression are summarized in the lower half of Table 2. The paths leading from masculinity to self-esteem ($P = +.510$, $p < .001$), from femininity to self-esteem ($P = -.223$, $p < .01$), and from self-esteem to depression ($P = -.478$, $p < .001$) were confirmed, whereas the paths from masculinity to depression ($P = -.003$, ns) and from femininity to depression ($P = +.037$, ns) were not. There was also a correlation between masculinity and femininity ($r = .275$, $p < .005$) not predicted by the models. These results partially support the congruence hypothesis for men, with masculinity having an indirect total effect of -.244 on depression, and femininity having an indirect total effect of +.107. Masculinity and femininity did not, however, have any direct effects on depression.

Discussion

The view that the self-concept is a central determinant of

psychological well-being has a relatively long history within psychology (e.g., Rogers, 1959), and the relationship between sex role self-concept and psychological well-being have recently been a major focus of interest (cf. Maffeo, Note 1; Schaffer, 1980; Sobol & Russo, 1981; Whitley, 1980). In particular, the effect of sex role self-concept on depressive disorder has been the subject of considerable theoretical speculation (e.g., Bart, 1971; Nickerson, 1977; Radloff, Note 3), partly due to the fact that the incidence of depression is higher for women than for men in North America, except in the lowest socioeconomic class (Lehmann, 1971). While many agree that one's self-esteem is regulated by one's sex role self-concept and that low self-esteem is a central feature of depression, several different hypotheses regarding the influence of sex role self-concept on self-esteem and depression have been proposed. The present research investigated three such hypotheses -- congruence, androgyny, and masculinity.

The results of the present study illustrated in Figure 2 are in accord with the general view that depression is indeed related to sex role self-concept as a consequence of the self-concept's influence on self-esteem. Although sex role self-concept was found to be related to of depression, the process was found to be different for men and women: for men, the congruence model was in accord with the data, whereas the masculinity model was supported for women.

For men, the finding that self-esteem was enhanced and depression minimized by the relative presence of masculine components and the

relative absence of feminine components in the self-concept suggests that it is a "macho-like" self-image that minimizes depression among male college students. Interestingly, among men there was no evidence that, as has been proposed by androgyny theorists (e.g., Bem, 1974; Gilbert, 1981; Kaplan, 1976), feminine, expressive elements in the self-concept foster mental health, at least to the extent that depression is considered as the index of mental health.

Even more suprising for the andogyny model was the finding for women, namely that self-esteem and depression were unrelated to the presence of feminine components in the self-concept. On the contrary, the enhancement of self-esteem and minimization of depression among women was found to be related only to the presence of masculine elements in the self-concept. Hence for both men and women the level of self-esteem increased and the level of depression decreased to the extent that masculine characteristics were components of the self-concept. This finding is in accord with previous reports that the positive relationship between androgyny and self-esteem is largly a function of androgyny's masculine component (e.g., Jones et al., 1978; Whitley, Note 2).

The findings that depression among men is best explained by the congruence model and among women by the masculinity model can be interpreted within the context of social learning theory (Bandura, 1977). According to this view, the standards which one employs as indices of personal merit and which, therefore, influence one's level of

self-esteem, are learned, directly and vicariously, from the rewarding and punishing consequences of behavior. Accordingly, from this perspective the present results would suggest that masculine behavior is rewarded for both males and females, and that feminine behavior is disapproved or for males but neither highly regarded nor disapproved of for females.

Studies of reward and punishment of sex role behavior among children are consistent with the social learning theory interpretation of the present results for men, but are only partially supportive of the interpretation for women. It has been reported that masculinity among male children is typically rewarded (e.g., Serbin, O'Leary, Kent, & Tonick, 1973) and that boys are punished more than girls for cross-sex behavior (e.g., Feinman, 1974, 1981; Fling & Manosevitz, 1972; Hartley, 1959; Lansky, 1967), findings which are consistent with the present support for the congruence model among men. The research for females, however, is ambiguous, since it has been variously reported that masculine behavior in girls is rewarded (Levitan & Chananie, 1972), is punished (Serbin et al., 1973), and, though punished, is punished less than cross-sex behavior among boys (Feinman, 1974, 1981; Fling & Manosevitz, 1972; Lansky, 1967). Nevertheless, despite the ambiguous implications of the findings of the studies of girls, the predominance of masculinity over femininity is not surprising in a culture which rewards such instrumental characteristics as assertiveness, dominance, and intellectuality in preference to the more expressive nurturance,

tenderness, and emotionality (cf. Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Tavris & Offir, 1977).

To summarize, the present research tested three models of the relationship between sex role self-concept and depression. For men, the data were in accord with the congruence model; that is, self-esteem was found to be maximized and depression minimized when gender and sex role self-concept were congruent. Female self-esteem and depression, however, were influenced only by the masculine components of the self-concept -- greater masculinity was associated with higher self-esteem and lower depression.

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Table 1

Intercorrelations and Means of Variables

	Masculinity	Femininity	Self-esteem	Depression
Masculinity	----	.138	.509	-.452
Femininity	.275	----	.080	.019
Self-esteem	.448	-.083	----	-.432
Depression	-.207	.076	-.482	----
Means				
Women	5.01	5.31	72.21	3.10
Men	5.28	4.92	77.77	2.48
t (256)	-2.49*	6.28**	-2.38*	1.31

Note: Intercorrelations of women's scores are shown above the diagonal, intercorrelations of men's scores below the diagonal.

*$p < .02$

**$p < .001$

Table 2

Significant Effects of Masculinity, Femininity, and Self-esteem on Depression

	Direct Effects	Indirect Effects[a]	Total Effects
		Female Subjects	
Masculinity	-.324	-.139	-.463
Femininity	ns	ns	ns
Self-esteem	-.274	none[b]	-.274
		Male Subjects	
Masculinity	ns	-.244	-.244
Femininity	ns	+.107	+.107
Self-esteem	-.478	none[b]	-.478

[a]Indirect effects were computed as the arithmetic products of the path coefficients along the confirmed causal paths (Asher, 1976).

[b]No indirect paths were possible under the models tested.

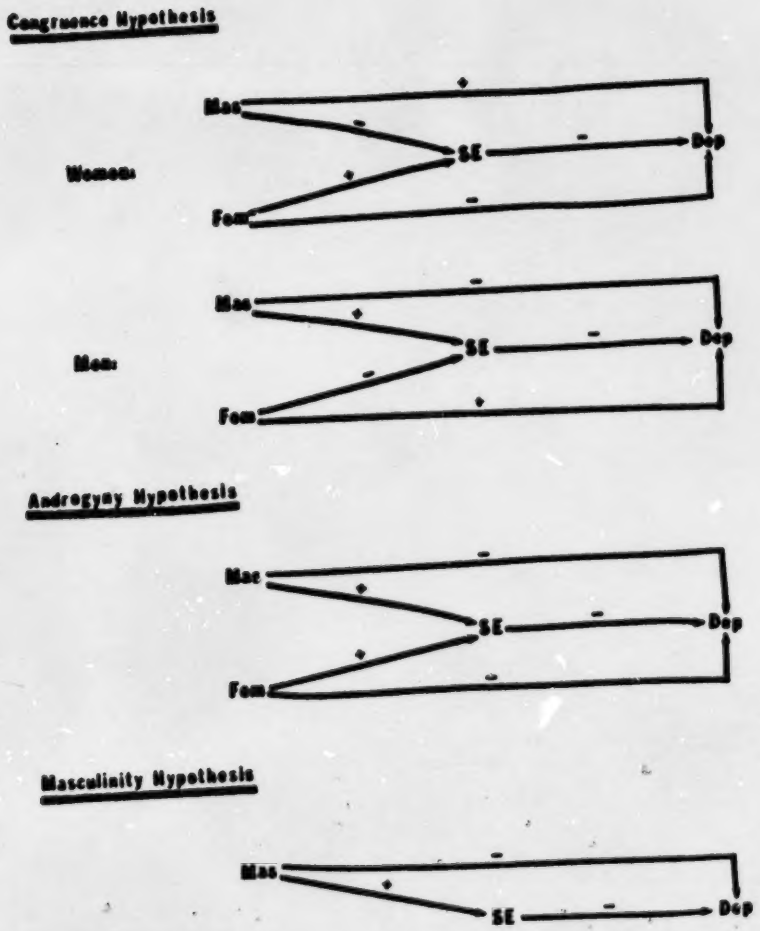

Figure 1. Path diagrams of the relationships predicted by the congruence, androgyny, and masculinity hypotheses (Mas = Masculinity, Fem = Femininity, SE = Self-esteem, Dep = Depression, "+" = positive relationship, "-" = negative relationship).

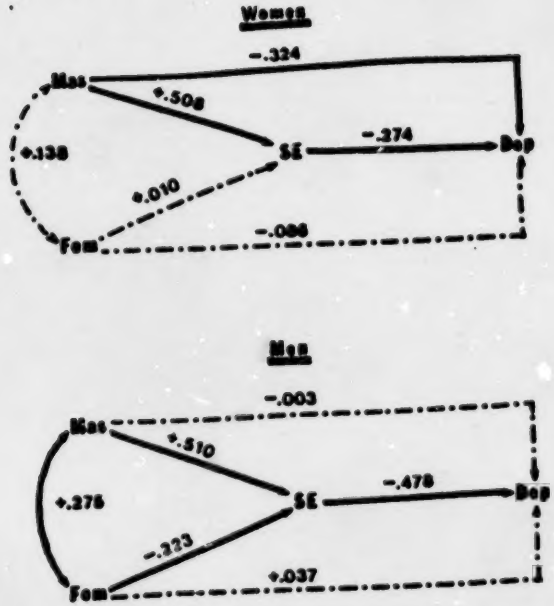

Figure 2. Results of path analyses for women and men (Mas = Masculinity, Fem = Femininity, SE = Self-esteem, Dep = Depression; values are path coefficients; solid lines indicate confirmed paths, broken lines indicate paths not confirmed).